

**TECO
POWER SERVICES**
A TECO ENERGY COMPANY

March 21, 1996

Mr. Nelson F. Rekos, Jr.
Project Manager
Clean Coal Branch
U.S. Department of Energy
Morgantown Energy Technology Center
3610 Collins Ferry Road.
Morgantown, WV 26505

**Re: Tampa Electric Company IGCC Project
Quarterly Technical Report - Fourth Quarter 1995**

Dear Nelson:

During the period from October thru December 1995, the Polk Power Station progressed steadily with significant progress being made in both the Power Block and Gasification areas. As of December 31, 1995, the actual Construction Percent Complete (77.1%) was slightly behind the Scheduled Percent Complete (81.1%). The next period will involve high rates of bulk installation in the gasification structure which is on the critical path. The project will continue to parallel this aggressive scheduled curve during this peak bulk installation phase recovering to the curve during first Quarter, 1996.

In December, the project issued Schedule Change Notice SCN-027 aligning the remaining contractor's mechanical completion dates (mostly TIC's) system turnover dates. The revised project schedule reduces the contractor's manpower peaks while meeting all Project Milestone Dates including the Turnover-for-Operation date of September 15, 1996.

Tampa Electric met with Florida Freshwater Fish and Game Commission personnel to discuss work west of SR 37 and gave them a tour of the area. This is an effort to secure permission from both the Fish and Game Commission and FDEP to modify this area's reclamation to a more cost conscious arrangement while providing an area to be more useful to local residents. When formally approved by the Governor in 1996, this arrangement will provide cost and schedule enhancements for the overall project. Shortly after this meeting, TEC began the physical reclamation efforts on the plans informally agreed to by the Florida Freshwater Fish and Game Commission and FDEP. In addition, TEC has received the previously requested approval from FDEP for required changes to the "B2" wetland area.

Bechtel completed its Houston Office engineering responsibilities and also completed close-out of the Houston Document Control activities including transmittal of historical files to Tampa Electric for microfilming of documents.

The Project met with DOE, GE, GEESI, and Phillips to review the sorbent development program and, among other things, to determine the types of sorbent for the first two fills. The next GEESI pilot plant planned for November and testing the METC 10 sorbent has been delayed until the Spring of 1996.

The Steinmüller CSC equipment was set in the gasification structure and alignment has begun.

Bench testing/calibration by the Project of Bailey Model PTS transmitters (about 500 in total) found them to be unacceptable. It has been agreed that Bailey will replace all of them with Rosemount transmitters. Air Products has also decided to replace all of their Bailey Model PTS transmitters. Bailey PTS transmitters in Monsanto's supply and those on a number of skids will also be replaced. The Project secured a six point agreement with Bailey Controls Company for replacement of Bailey PTS electronic transmitters with Rosemount Series 1150 "smart" transmitters. The first shipments are due in early December.

General Electric performed a planned test of the redesigned CT combustor. The test indicated some continuing hot spots. Therefore, GE made some liner air flow modifications, retested the combustors on November 3 and 10, to determine the effect of modifications to the sizing and placement of dilution holes in the liner. A meeting was held at the site on November 16 to review the results. GE is proceeding with the manufacture of liners for our CT using this most recent modification.

Rotor installation for the Steam Turbine started in December.

During this period, the project completed joint walk downs with construction and received turnovers for numerous plant systems.

Other significant construction accomplishments during this period included:

- a. Flooded the Intake Structure Reservoir and started temporary dike removal
- b. Completed insulation of ASU Cold Box
- c. Completed Fire Protection deluge piping for the Main Transformers
- d. Air Products completed insulation and demobilized the contractor

- e. Completed setting the Steinmüller equipment in the Gasifier Structure
- f. Commenced wetlands reclamation work west of SR 37
- g. Completed Auxiliary Boiler installation
- h. Installed LP diaphragms and bearings in Steam Turbine.
- I. Completed rough set of major HGCU equipment.
- j. Completed erection of Sulfuric Acid Plant.
- k. Montgomery Elevator mobilized for the gasifier structure elevator installation (T-008)

Air Products successfully ran the Main Air Compressor in the ASU at full load for approximately nine hours. They also successfully ran the ASU DGAN motor uncoupled.

I. TAMPA ELECTRIC ACTIVITIES

During this period, TEC began training for the second group of IGCC Process Specialists. It is expected that training will continue through the end of the second quarter of 1996. Also during this period, TEC completed the hiring of the permanent plant staff IGCC Process Specialists.

Discussions began in earnest with the FFGC related to specific needs and requirements for the TEC proposed plan for reclamation of the plant area west of SR 37. This plan would entail creating a set of fishing lakes for local residents that would be operated by FFGC. DFEP is in general agreement with the concept, but it will require several months of discussions, negotiations, submittals, reviews and meetings to finalize and get the concept approved. Based on preliminary discussions with the agencies, TEC is preceding with physical work, prior to formal approval receipt in order to take advantage of mobilized site contractor and to expedite the overall effort. During this process, TEC has also secured approval from FDEP to modify the "B2" wetland to account for final fill and grade requirements.

TEC provided support for DOE during their site review of the 40% construction milestone. TEC also gave presentations at the EPRI Gasification Conference and at the Conference on Air Emission Reducing Strategies, both concerning the current status of the Polk Project.

Discussions continued with Texaco to finalize their commissioning and start-up assistance for the project.

TEC maintained an active presence with DOE, GE, GEESI, and Phillips on the development of a plan to provide sorbents for the initial operation of the HGCU system. Phillips will now supply, for a May 1, 1996 delivery, Z-Sorb III for mechanical check-out, testing and initial operation. DOE is providing funding for this sorbent. Based on poor schedule performance by Phillips, it appears that their Z-Sorb IV will not be technically, physically, or commercially available for initial operation in the Polk Unit. It does now appear that if the DOE Sorbent METC-10 successfully completes the GEESI pilot plant test and all patents issues can be resolved in time, METC-10 would be available for operational testing late in 1996. This is all dependent on the outcome of the pilot plant tests, which were delayed from November 1995 to March 1996.

Most of the significant technical issues with MAN GHH for the RSC have now been resolved. What remains is to finalize their impact on the contracts commercial completion.

Numerous tours were completed during this period including: Baoshan Steel, SRI, Japan and the Netherlands.

Efforts were initiated to define the technical and schedule critical spare parts requirements for initial operation of the plant.

TEC has increased its efforts to insure timely completion of the plant simulator which is vital to the training of the plant operations staff.

II. HOUSTON OFFICE/RESIDENT ENGINEERING ACTIVITIES

Bechtel has completed their activities in the Houston office and has relocated the remaining office engineering staff to the field to be able to more rapidly respond to questions and problems from the construction and start-up staff. This represents a group of 15-20 people which will vary according to site actual needs. Their immediate primary focus will be finalization of the electric design effort.

The current staff level for Resident Engineering is 11 people. The punch list team consists of 7 people and the Design/Audit Group is at 4 people.

Project Engineering Activities

- Completed electrical design audits
- Completed refractory installation plans
- Completed pipe min wall audit/resolution

III. MATERIALS MANAGEMENT ACTIVITIES

As with all other Bechtel and TEC support groups, the project's entire needs from the Materials Management organization is now headquartered at the site. This applies to purchasing, expediting, traffic, and quality control functions. One of their current major efforts is coordinating the entire project's needs for construction, start-up and training technical advisors from the vendors.

IV. CONSTRUCTION MANAGEMENT ACTIVITIES

The CM staff has reached its maximum with the recent addition of field engineers to support and expedite contractors questions and needs. During this period the following activities were completed and/or initiated:

- Flooded the intake structure and began intermediate temporary dike removals.
- Completed the ASU Cold Box enclosure.
- Completed main transformer deluge installation.
- Completed setting the Steinmüller coolers.
- Began reclamation work west of SR 37.
- Completed main plant site work and began planting of trees and bushes.
- Completed the HRSG stack.
- Completed the Auxiliary Boiler installation.
- Completed H₂SO₄ plant erection
- Began assembly of Steam Turbine internals.
- Completed bacteriological sampling of wells P-1 and P-2 for the potable water system.
- Received approval for provisional use of the Administration Building sanitary system.

Major Activities Scheduled for next Quarter:

- Commence installation of HGCU refractory.
- Prepare Combustion Turbines for GE modifications to start January 30, 1996.
- Complete acid plant checkout.
- Start installation of refractory in the HGCU absorber.
- Complete HRSG Hydrotests.
- Complete GE 2-3 spacer cutback and combustor change-out.

V. ENVIRONMENTAL

Major Activities Accomplished:

- Fired aux boiler this month. This begins the time clock for emissions testing.
- Requested and received approval to transfer water from west of SR 37 to IMC. Transfer began January 25, 1996.

VI. CONTRACTOR STATUS

1. FIRE PROTECTION (A-015) F.E. Moran

At the end of the reporting period F.E. Moran is actually 41.3% complete vs. scheduled 44.1%. They continue to support all project efforts. During the reporting period the most significant activity accomplished was completing the check-out of the main transformer deluge system.

2. SITE DEVELOPMENT (CP-001) Johnson Bros.

Johnson Bros. major activities are the site development work which includes earthwork, paving, drainage structures and highway improvements. The cooling reservoir earthwork is complete. The temporary berms have been removed in all sections of the cooling canal. Circulation through the reservoir has been achieved. Current elevation of the cooling reservoir is 135.8 feet vs. the planned 136 feet.

Johnson Bros. has begun revegetation in the wetlands. They are 97.3% complete vs. 97.9% scheduled. Their remaining work involves completion of the revegetation plan.

3. MAIN CIVIL INSTALLATION CONTRACT (CP-008) Johnson Bros.

This contract for the civil installation work is 100% complete. Johnson Bros.' demobilization is underway.

4. GASIFICATION AND COAL HANDLING MECHANICAL/ELECTRICAL (CP-011) - TIC

TIC is working to a revised schedule to recover from the late structural steel and piping deliveries. They have now completed the installation of all foundations north of the Gasification structure. TIC is installing heavy wall piping in the Gasification structure working weekends to load piping in the structure and maintain the schedule.

TIC has completed setting and aligning the Steinmüller equipment in the Gasification structure. TIC has completed piping installation in the flare area.

Overall TIC is 1-2 weeks behind the mid-point curves, but is taking advantage of hiring additional crafts from other contractors downsizing on the site and shifting crafts from the coal handling area that is completed.

As of the end of the December 1995, TIC had 407 contractor personnel on site. They are currently 56.4% complete vs. scheduled 62.0% complete.

5. GASIFICATION WASTE PROCESSING (CP-011A) TIC

The Gasification Waste Processing area includes the Hot Gas Clean Up, Brine and Slag Handling systems. During this period, TIC completed erection of structural steel for the pipe rack area and completed the installation of mechanical and electrical work at the Thermal Oxidizer. TIC also completed setting structural steel and pipe rack for Slag Handling area. At the end of the reporting period TIC was 52.2% complete vs. 47.7% complete scheduled.

They have completed the rough set of major HGCU equipment. It is expected that during the next reporting period the Absorber and Regenerator Refractory material will be installed.

6. POWER BLOCK AND PLANT UTILITIES MECHANICAL/ELECTRICAL CONTRACT (CP-012) H. B. Zachry

Throughout the reporting period, H.B. Zachry has been hampered by a larger than expected percentage of re-work due to mis-fabrication, design and interferences. This percentage has been running 3-5%. In addition, not all of the electrical design was complete and scoping of cables in the contract remains a major problem.

H.B. Zachry during this reporting period completed the erection of the Auxiliary Boiler and turned it over to Start-up.

H.B. Zachry , at the end of December 1995, is 81.5% complete vs. a scheduled 87.4% based on the early target schedule. Actual manpower is 286 vs. 200 scheduled.

H.B. Zachry has completed all electrical distribution systems and has completed the wiring to the GE Combustion Turbine. It is expected that the Steam Turbine will be turned over to Start-Up during the next reporting period, just slightly behind schedule.

7. FIELD ERECTED TANKS (D-001) Tampa Tank Inc.

Tampa Tank has completed the field erection of the Sulfuric Acid storage tank and completed painting Service Water, Demin Water, Amine and Chemical Cleaning tanks.

As of the end of this reporting period, Tampa Tank is 100% complete on their contract.

8. WEST OF SR 37 RECLAMATION CONTRACT (CP-022) Johnson Bros.

Johnson Bros. begun the reclamation west of SR 37 on November 13, 1995 with dewatering and mobilization. Earthwork commenced on a two shifts per day, 10 hours per shift, 6 days per week schedule.

As of the end of this reporting period, Johnson Bros. was actually 11.3% complete with work going significantly faster than expected.

The area at the extreme west end of the boundary has been completed and work has begun on the revegetation efforts.

9. AIR SEPARATION UNIT (V-004) Air Products and Chemicals, Inc.

Air Products has completed the insulation in the ASU and demobilized their subcontractor. They are currently completing the mechanical punch list items and are demobilizing their subcontractor.

During the reporting period, Air Products mobilized and completed the erection of the cold box enclosure. Air Products has completed their final painting, and the electrical scope of work.

The Air Products Start-Up staff mobilized and was fully staffed by the first week of December 1995. Air Products ran the Main Air Compressor motor the week of December 18, 1995 and ran the Main Air Compressor at full load for approximately nine (9) hours. Also, in December, they successfully ran the DGAN motor uncoupled.

It is expected that early in the next reporting period that Air Products will begin to develop their lay-up procedures to take effect after they have completed their start-up and, between their start-up and the initial plant operations.

10. SULFURIC ACID PLANT (V-014) Monsanto Enviro-Chem

Monsanto has completed all structural steel placement, electrical work and mechanical check-out. They commenced Start-up activities and completed the insulation. Monsanto did a partial plant start-up according to schedule.

They are currently 100% complete on the project effort and have departed the site. Monsanto will return for final check-out and catalyst loading during June 1996.

Equipment has been laid-up. Plant Operations and Maintenance will maintain and monitor their equipment until Monsanto's return as noted above.

VII. START-UP ACTIVITIES

During this reporting period, Start-Up completed the check-out and energized the In-Take Structure Substation. Start-Up also completed the check-out and energized the permanent power for the Coal Plant.

The Well Water system has been completed. Check-out has been completed and the Well Water system has been flushed.

The Generator Breakers have been tested and check-out. The Intake Structure Crane has been load tested. The Service Water system has been check-out and placed in service as has the Open Loop Cooling Water system. Permanent power has been provided to the Air Dryers and Instrument Air Compressors. Fire Water system has been hydro tested and the system placed in service.

As of December 29, Start-Up is 24% complete vs. a scheduled 27% complete. Startup has received 60 system turnovers vs. 59 scheduled from construction. Checkout is complete on 42 systems with only 13 systems slightly behind schedule. The next two schedule milestones "Steam to the ASU" and "First Coal" are forecasted to be completed on schedule early during the next reporting period.

Potable Water tank was placed in service. The Fuel Oil tank has been filled. Demin Water has been started up and placed in service, as has the Reverse Osmosis system.

It is expected that early during the next report period that the Gas Turbine Lube Oil system will be flushed and the Auxiliary Boiler will be boiled out and first fire will begin.

VIII. OTHER PROJECT PARTICIPANTS

1. GENERAL ELECTRIC

General Electric performed a test of the redesigned CT combustor on October 20. They were not satisfied with the results as there continued to be some visual hot spots due to flame impingement. GE redesigned the cooling air flow to reduce the temperature of the hot spots and conducted another test on the combustor on November 3.

Two additional tests in Schenectady were conducted on November 3 and 10, to determine the effect of modifications to the sizing and placement of dilution holes in the liner. A meeting was held at Polk Power Station on November 16 to review the results. These results showed significant improvement in flame pattern and reduction of liner wall temperatures. GE is proceeding with the manufacture of liners for the Polk Combustion Turbine using this most recent design. This design showed No_x levels, during this latest test, that were not as low as in the previous tests, but were well within threshold limit of 25 ppm.

GE has recommended that all 7F's be modified with the 2-3 spacer cut-back revision and considers this to be a permanent repair. Polk Unit is scheduled to have this modification done in early February, 1996.

In December, General Electric met with Tampa Electric and Tampa Electric's insurers to address the insurers' concerns about the operating and maintenance history of the 7F/9F fleet. GE explained all of the significant problems experienced to date and how they might apply to the Project. GE currently has the replacement liners in fabrication and they are expected to be delivered in early January 1996.

2. GEESI

By the first week of November 1995, bench scale tests of METC-10 sorbent had been completed. The METC-10 sorbent was then ordered for GE pilot plant test initially scheduled for late December 1995. It has been postponed until early March 1996 due to the onset of winter weather in Schenectady. It was expected that Phillips' Z-Sorb IV sorbent would be a subsequent candidate for test. Due to continuing problems with the Phillips' organization and their testing program, it is doubtful whether their sorbent will be ready for any tests during the first half of 1996.

GEESI is continuing to incorporate Tampa Electric and Bechtel comments into the O&M Manual and expects to issue the final version in late December, 1995.

IX. PROJECT SCHEDULE

The Project Milestone COOLING RESERVOIR COMPLETE was completed on schedule on October 15, 1995. The temporary dike has been removed and reservoir has been filled.

The Critical Path for the entire project remains the Gasification Tower Steel and Piping.

The actual Construction Percent Complete continues to track slightly behind the Scheduled Percent Complete. The project will continue to parallel this aggressive scheduled curve during this peak bulk installation phase recovering to the curve during first quarter, 1996. The resource curves reflect the same, with Large and Small Bore Pipe actuals tracking slightly below the schedule curves.

The Project Milestone UTILITIES TO ASU was completed on schedule on November 13, 1995. This provides water, air, and power to Air Products so that they may proceed with startup of the Air Separation Unit.

The Auxiliary Boiler erection was completed and checkout has begun in order to support the Project Milestone STEAM TO ASU scheduled for January 10, 1996. The Sulfuric Acid Plant has been completed and is expected to be completed in time to support the milestone of February 15, 1996.

Additional paths are nearing critical. These are:

Combustion Turbine Completion, Lube Oil Flush, and Startup of the Steam Turbine

The rotor installation for the Steam Turbine started in December 1995. It is running about 2 weeks later than H.B. Zachry's target plan, but Zachry is working to a recovery schedule to meet the Startup Turnover Date of February 13.

HRSG is expected to be Hydrotested in early February 1996.

Monsanto is expected to achieve the Project Milestone, ACID PLANT COMPETE, earlier than the scheduled date of February 15, 1996.

The Project Milestone for providing steam to the ASU is expected to be completed in early January 1996. Also at the end of January, it is expected that the Combustion Turbine Lube Oil flush will be completed.

In addition, during the first part 1996 it is expected that Quest will be contracted to begin preparation of the site process safety management program.

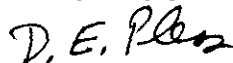
An overall performance test philosophy and conceptual procedures for each of the planned contract performance tests has been initiated and are expected to be completed early during the next Quarter.

X. SUMMARY

From an overall standpoint, the Project continues to track very well. Some items are slightly behind schedule, but many of these are a function of not being able to record actual progress until the systems are 100% complete for check-out and start-up.

The critical Path still remains in the Gasification area, with piping and electrical check-out now becoming our main focus. It is expected that TIC will enhance their efforts with additional staff in the next Quarter and by the end of the first Quarter 1996 the Project is expected to return to being essentially on schedule.

Very truly yours,



D.E. Pless
Project Management

DEP:jm:G:\DOE\LETTERS\FEBQTR.RPT

cc: C.R. Black
R.N. Howell
Trimco